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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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BERENATO, WHITE & STAVISH, LLC			EXAMINER	
6550 ROCK SPRING DRIVE			CHAWLA, JYOTI	
SUITE 240				ART UNIT
BETHESDA, MD 20817				PAPER NUMBER
			1761	

DATE MAILED: 01/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	10/688,671	
Examiner	Art Unit Jyoti Chawla	
	1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on _____.
2a) This action is FINAL. 2b) This action is non-final.
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-5 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
5) Claim(s) ____ is/are allowed.
6) Claim(s) 1-5 is/are rejected.
7) Claim(s) ____ is/are objected to.
8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) Notice of Informal Patent Application (PTO-152)
6) Other: _____.

DETAILED ACTION***Specification***

1. The abstract of the disclosure is objected to because of the following informalities:
2. In the abstract, on line 3, "microbal" should be "microbial". Correction is required. See MPEP § 608.01(b).
3. In the detailed description of the invention, on line 2, "microbal" should be "microbial ", line 4, "mycrotoxins" should be "mycotoxins", on line 6, "continuos" should be "continues" and on the last paragraph of page 3, line 2 "carciginous" should be "carcinogenic".

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an

invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-4 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1,3 and 6 of copending Application No. 10/728,417. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the copending applications recite an enzyme and catalyst based antifungal agent and various methods of its use. The main emphasis of both the applications is to prevent the pre and post harvest fungal invasion of fungi on fresh fruits and vegetables.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112, second paragraph

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 1 recites a process for prolonging a fungus invasion on citrus fruits by application of a liquid formula consisting of enzymes and catalysts utilizing natural microbial action to break down carbohydrate cell walls of fungus.

9. It is unclear whether "consisting of" is intended to be a claim limitation for the use of enzymes and catalysts only. If so then the phrase "utilizing the natural microbial action" needs to be amended as it indicates the presence of one or more type of microbe to assist in the function of the enzymes and catalysts. However, if the claim includes the microbial action as an essential part of the action of enzymes and catalysts or if a microbe is the carrier of these enzymes, then the claim language would have to reflect that fact. Also there is no mention of the names or even category of enzymes and catalysts being referred to in the proposed formula and without such details the metes and bounds of the patent protection are unclear. However, to expedite prosecution, "consisting" would be considered to mean, "comprising". Clarification and/or correction are required.

10. Claim 3 recites the step of treating the citrus fruit using atomization. The language of the claim is vague and indefinite. The phrase "atomization of said fruit" may mean the fruit is atomized and sprayed or it could also be construed to mean the liquid fungicide is atomized and sprayed on to the surface of the fruit. Similarly the term "particle" is ambiguous as well, particle size is a term used for dry powder and since the formulation recited by the applicant is in liquid form, it is not clear as to what "particle" stands for. However, to expedite prosecution, "particle" would be considered to mean, "droplet".

Clarification and/or correction are required.

11. Claim 4 recites the step of drenching the citrus fruit in liquid wax based substance. The language of the claim is vague and indefinite as to the kind of wax and the specific details about the kind and amount of substance in the wax.

Clarification and/or correction are required.

12. Claim 5 recites the step of washing the fruit at the point of arrival prior to being presented to the consumer. However, it is unclear as to what is involved in washing of the fruit, e.g., the temperature of water used, the equipment used to wash (tub, bucket or brush), any cleaning agents used, drying and /or polishing of the washed fruit before it is to be presented to the consumer. Clarification and/or correction are required.

Claim Rejections - 35 USC § 112, first paragraph

13. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

14. Claims 1-5 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure, which is not enabling. As disclosed, the applicant's intent seems to

be disclosing a process of application of a liquid formula consisting of enzymes and catalysts; however, the specification does not provide any details of the category of enzymes and catalysts or even define the terms. In addition there are no details given about the formula. Therefore, the claims contains the subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. As described earlier in this office action to expedite prosecution, "consisting " would be considered to mean, "comprising" for the purpose of this office action.

17. Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by **Ryals et al** (US Patent Number 5631007).

18. In regards to claim 1, Ryals et al. describe an antifungal composition comprising of enzymes and peptides that target plant pathogens including fungi (column 3) and protect crops including citrus (column 4, lines 10-12). The enzymes disclosed by Ryals et al. attack the cell walls of the fungus (column 3, lines 35-42) and the peptide (which may or may not be an enzyme) has the ability to act on the cell membrane (column 3, lines 35-45). As disclosed, the peptide works to activate the enzyme, i.e., the peptide acts as a catalyst (column 4, lines 55-65). The composition disclosed by Ryals et al. can be administered in liquid form (column 5, lines 25-31). Therefore applicant's recitation of claim 1 is clearly anticipated by Ryals et al.

19. Claim 2 recites that the treatment with the enzymatic antifungal is performed in vivo. Ryals et al. teach that their enzymatic antifungal composition can be applied to the crop area or the plant to be treated (column 5, lines 18-20).

20. Claim 4 recites drenching the citrus fruit in wax-based substance as another method of treatment and Ryals et al. disclose paraffin (a wax) among the list of suitable solvents (column 6, lines 21-26). Ryals et al. do not use the term "drenching "; however pouring of the treatment liquid is one of the methods of

application mentioned (column 6, lines 6-10). If a liquid is poured on to a fruit, it will get drenched in the liquid, therefore, claim 4 is readable on Ryals et al. Therefore, claims 1, 2 and 4 are clearly anticipated by Ryals et al.

21. Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by **El Ghaouth et al** (US Patent Number 6419922).

22. In regards to claim 1, El Ghaouth et al. describe a composition comprising of enzyme or enzymes that target plant pathogens including fungi (column 3) and protect or cure crops including citrus (column 3, lines 25-28). The enzymes disclosed by El Ghaouth et al. attack the cell walls of the fungus (column 1, lines 55-57). As disclosed, the peptide works to activate the enzyme, i.e., the peptide acts as a catalyst (column 4, lines 55-65). The composition disclosed by Ryals et al. can be administered in liquid form (column 5, lines 25-31). Therefore applicant's recitation of claim 1 is clearly anticipated by Ryals et al.

23. Claim 2 recites that the treatment with the enzymatic antifungal is performed in vivo. El Ghaouth et al. teach that their enzymatic antifungal composition can be applied to the plant to be treated (abstract and column 3, lines 7-8).

24. Claim 4 recites drenching the citrus fruit in wax-based substance as another method of treatment and El Ghaouth et al. disclose drenching, spraying or dipping among the suitable application methods (column 3, lines 7-10). Therefore, claims 1, 2 and 4 are clearly anticipated by El Ghaouth et al.

25. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by

Johansen et al (US 2002/0028754 A1).

26. In regards to claim 1, Johansen et al. describe an antifungal composition

comprising of enzymes and non-enzymatic component (paragraph 0005) that

target plant pathogens including fungi (paragraph 0009) and protect fruits and

vegetables (Paragraph 0161). The enzymes disclosed by Johansen et al. attack

the cell envelope (walls) of the fungus (paragraph 0033). As disclosed, other

compounds that work to activate the enzyme, i.e., it acts as catalysts (Paragraph

0034). The composition disclosed by Johansen et al. can be formulated in liquid

form (paragraph 0145 and 0150). Therefore applicant's recitation of claim 1 is

clearly anticipated by Johansen et al.

Claim Rejections - 35 USC § 103

27. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

28. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

29. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Ryals et al** (US Patent Number 5631007) in view of **Hsu** (US Patent Number 5857626).

30. Ryals et al. is applied as above in regard to claim 1. Claim 3 recites the step of atomization of fruit with particles less than 7 microns; Ryals et al. describe atomization as one of the methods of application for their composition (column 6, lines 6-10).

31. Claim 3 differs from Ryals et al. in the fact that it does not teach the droplet size of the atomized liquid enzyme based fungicide. Hsu teaches an atomizer that is capable of producing a superfine spray with the droplet size that can be varied from 1-16 microns (column 3, lines 10-12) and can be used for spraying a pesticide or fumigant or plain water (column 3, lines 15-18). To expedite prosecution, "particle" would be considered to mean, "droplet". It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify Ryals et al., for the purpose of including

the droplet size for atomization. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

32. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Ryals et al** (US Patent Number 5631007) in view of a newspaper article from October 17, 1999 (Allentown, PA; Morning call), herein after referred as MC.

33. Ryals et al. is applied as above in regard to claim 1. Claim 5 recites the step of washing of fruit at point of arrival, Ryals et al. is silent as to the washing of fruit or vegetable. However MC teaches to always wash fruits and vegetables before eating or using them for cooking. It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify Ryals et al., for the purpose of including the washing step at the point of arrival. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

34. The prior art made of record as part of USPTO form 892 contains references that have not been relied upon in this office action but are considered pertinent to applicant's disclosure.

Remarks/ Conclusion

1. No claim is allowed.

Note:

Since neither the claims nor the specification provided by the applicant defines the terms "enzyme" and "peptide" dictionary definitions have been used for the purpose of this office action.

Enzyme: Any of numerous proteins or conjugated proteins produced by living organisms and functioning as specialized catalysts for biochemical reactions.

Source: The American Heritage® Stedman's Medical Dictionary

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Catalyst: A substance, usually used in small amounts relative to the reactants, that modifies and increases the rate of a reaction without being consumed in the process.

Source: The American Heritage® Stedman's Medical Dictionary

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jyoti Chawla whose telephone number is (571) 272-8212. The examiner can normally be reached on 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571) 272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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